CLAIMS:

1. A rotating electrical machine comprising:

a housing;

a shaft mounted rotatably within the housing;

a rotor fixed to the shaft and providing a magnetic field;

a stator positioned about the rotor within the housing and having a winding;

a switch mounted with the housing and having a first position for allowing current in one direction through the winding and a second position for allowing current in an opposite direction through the winding;

a mechanical activator movable with or by the shaft and acting on the switch so as to move it between the first and second positions when the winding is so aligned that current-inducing effects of the magnetic field on the winding are at or near a minimum.

2. A rotating electrical machine comprising:

a housing;

a shaft mounted rotatably within the housing;

a rotor fixed to the shaft and having a plurality of poles made of ferromagnetic material;

a stator positioned about the rotor within the housing and having a winding;

a switch mounted within the housing and having a first position for allowing current in one direction through the winding and a second position for allowing current in an opposite direction through the winding;

a mechanical activator movable with or by the shaft and acting on the switch so as to move it between the first and second positions.

3. The electrical machine of claims 1 or 2 wherein the switch has a third position for not allowing current through the winding, and the mechanical activator moves the switch to the third position between the first and second positions.

4. The electrical machine of any one of claims 1 to 3 wherein the mechanical activator comprises a cam mounted about the shaft and a cam follower communicating with the cam and with the switch.

5. The electrical machine of claim 4 wherein the cam has four portions for moving the switch to the first position for $1/6^{th}$ of a cycle and then to the third position for $1/3^{rd}$ of the cycle, and then to the second position for

1/6th of the cycle, and then to the third position for 1/3rd of the cycle.

6. The electrical machine of any one of claims 1 to 3 wherein the mechanical activator comprises a crank and a linkage for moving the switch to the first position for 1/6th of a cycle and then to the third position for 1/3rd of the cycle, and then to the second position for 1/6th of the cycle, and then to the third position for 1/3rd of the cycle.

7. The electrical machine of any preceding claim including three switches positioned 120 angular degrees apart, and wherein the mechanical activator acts on all the switches to move them in a sequence.

8. The electrical machine of any preceding claim wherein the electrical machine is a permanent magnet brushless DC electric motor.

9. The electrical machine of any preceding claim wherein the electrical machine is a DC Switched reluctance motor

10. A rotating electrical machine as herein described with reference to the accompanying drawings.